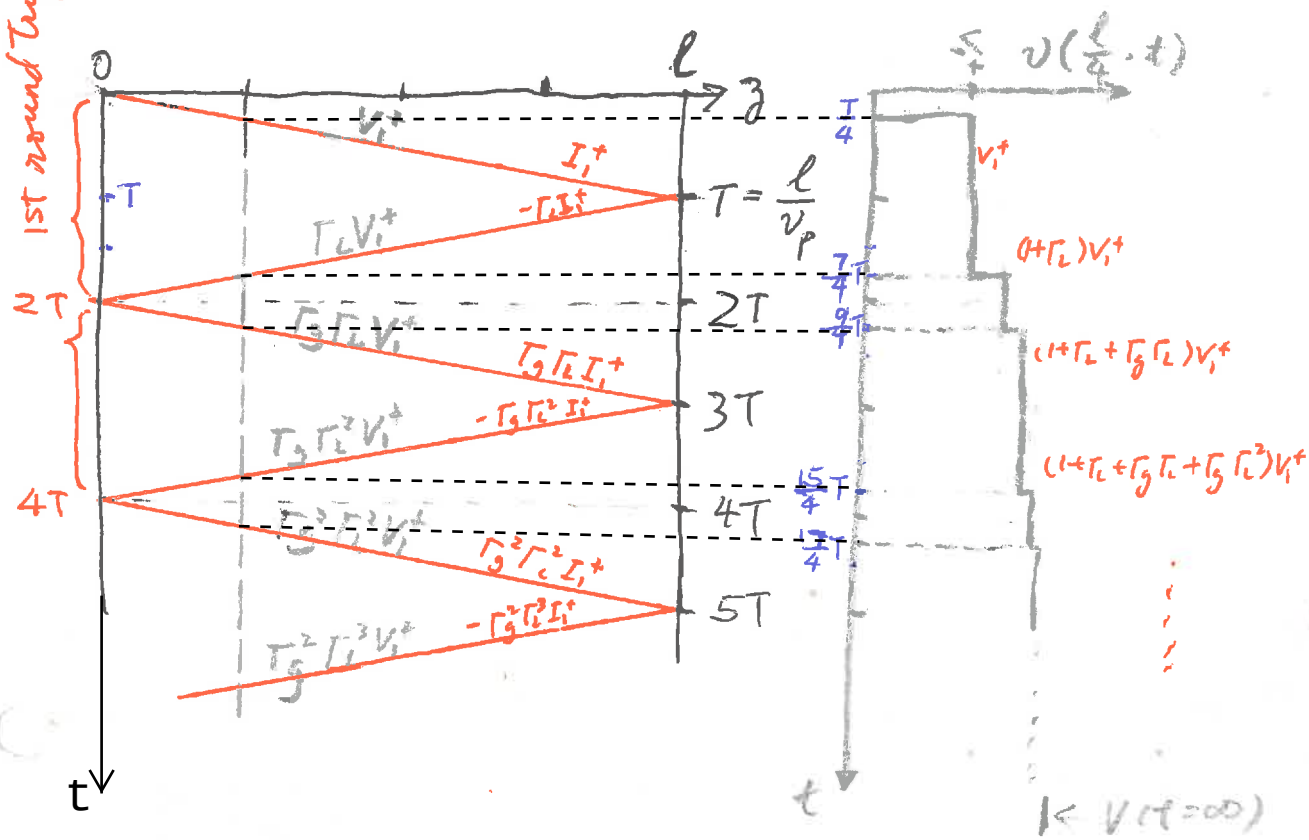
Bounce diagrams

For V (For I) Assuming $\Gamma_{g,L} > 0$



similarly, you can construct a plot for i vs. t.
That would look a bit different
It won't be monotonic, due to the $-$ signs
They converge to their respective steady state values.

We usually send bits by pulses, not step functions.
coz we want to send a lot of bits, to deliver a lot of information.

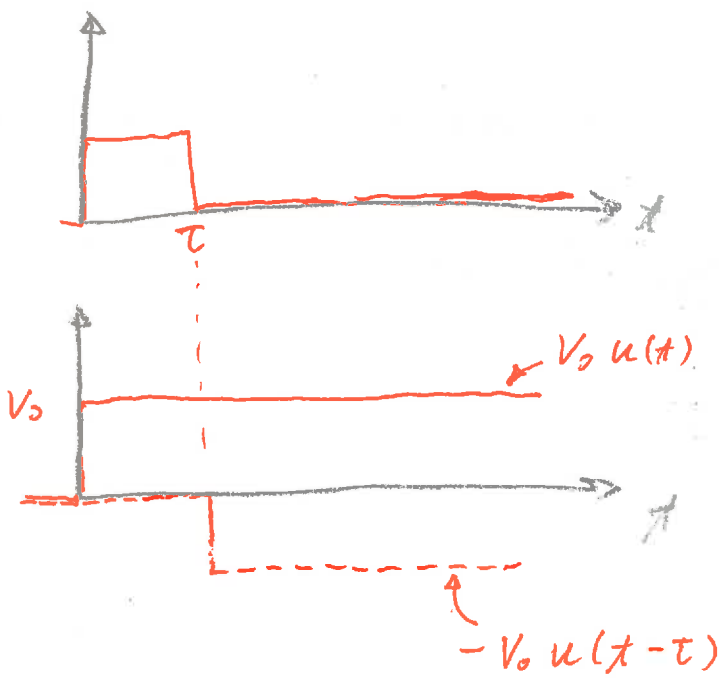
What we really care is how a pulse would propagate back & forth on this transmission line, not a step function.

But why did we do that? How's that related to what we really want to know?

yes. a pulse is the superposition of two step functions.

Pulse (t)

$$= V_0 \left[\underbrace{u(t)}_{\text{step function}} - u(t-\tau) \right]$$



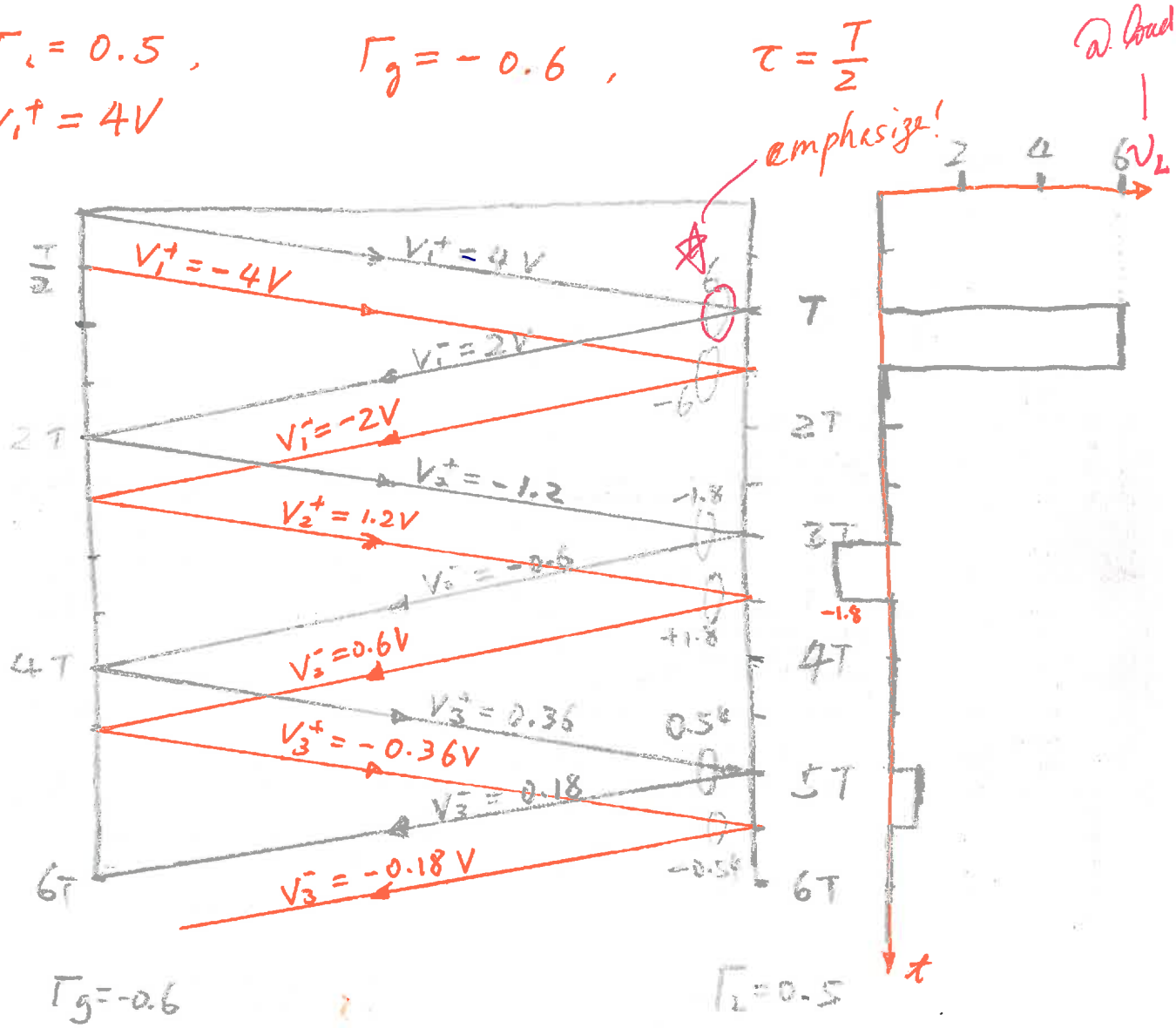
The transmission line plus generator plus load is a linear system.

So. the response to the superposition of the two steps is simply the superposition of the two responses.

Now. we use an example to show how we trace the echos of a pulse w/ the bounce diagram.

$\Gamma_L = 0.5$, $\Gamma_g = -0.6$, $\tau = \frac{T}{2}$

$V_1^+ = 4V$



Let's look @ the voltage waveform @ the load. $v_L(t)$

Steady state?

Finish Homework #6.